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Research Paper Outline

1. Introduction of Topic and Hypothesis
   1. Proposed Intro (curtailed): The West Indian Manatee is a species that has only been of worldwide concern within the last two decades. With this new wave of concern for manatees and marine mammals in general, it was realized that certain species, including the blue whale, the humpback whale, the stellar sea lion, the West Indian Manatee and many others were threatened of endangerment. This realization led to national and international legislation, including the US Marine Mammal Protection Act and the UN Environment Programme. These groundbreaking documents towards marine mammal protection have been the catalyst for other legislation, non-governmental and governmental organizations, and nation wide action towards the protection of each marine mammal species, in particular the West Indian Manatee. The question is, what now needs to be done in order to get the West Indian Manatee off the Endangered Species List?
   2. Proposed Hypothesis: It has been concluded that the Florida Manatee population is on the rise and the prospect of delisting the species from its status as Threatened, is in sight. However, manatees are still in danger due to many outstanding threats that may be harder to avoid than originally thought. These threats include the closure of many Florida power plants that serve as warm water refuges in the winter, the destruction of seagrass habitats due to boater noncompliance, and boat collisions. The latter two may be due to an increase in the Florida human population and a persistent indifference or lack of awareness to the species of interest. Within this research paper, I will do my best to come up with strategies and improvements to set laws in order to remedy the problems I have outlined.
2. History of Conservation and Management – Marine Mammals
   1. Examination of the Marine Mammal Protection Act of 1972 and its amendments
      1. The basic goals and intentions of this Act, including the initiation of the Marine Mammal Commission
         1. What preventative laws has it put in place in order to protect marine mammals
            1. The impact it has had
            2. The founding of the Endangered Species Act
   2. Examination of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals by the United Nations Environment Programme
      1. The basic goals and intentions
      2. The impact it has had
         1. Consideration of a worldwide attitude towards Marine Mammals
   3. Examination of whether or not these measures have been effective
      1. According to Reeves and Reijnders “the Plan” and the MMPA “provide strong scientific basis for conservation actions, but they do not ensure that needed actions will be taken” (Reeves and Reijnders 2002)
         1. What do they mean by this and what evidence is this statement based on.
3. History of Conservation and Management – West Indian Manatees
   1. Where and when did the focus on Manatee protection start
      1. US Fish and Wildlife Service created the Florida Manatee Recovery Team after the introduction of the Endangered Species Act of 1973
         1. The Florida Manatee Recovery Team created the Manatee Recovery Plan of 1980
            1. Its basic goals and strategies to protect manatees and how they are an extension and how they differ from “the Plan” and the MMPA.
         2. 13 Manatee Protection Plans in the different regions
            1. present map of where manatees occur throughout the Florida region to give a comparison of where the 13 counties are
            2. Specifically look into the Sarasota County Manatee Protection Plan

Its goals and strategies in relation to all other legislation and acts on manatee protection

1. Current Threats to Manatees
   1. Decline of warm water habitats for Manatees during the winter season
      1. Look at the current distribution of power plants, natural springs and thermal basins used by manatees – present a map of these locations throughout Florida
      2. Explain why this constitutes as a threat
         1. Cannot have manatees rely on a source that may disappear in a few years time – they will not be able to survive cold spells if they go in search for their usual power plant warm water refuges
         2. There has been an increase in the manatee population which is the reason why most scientists believe the current habitats, without including the power plants, will not be able to sustain a large influx of manatees
            1. Will lead to a decline in the manatee population
      3. Historically, what did manatees do before the presence of power plants
         1. Provide population demographics of manatees before presence of power plants to show if power plants have increased survival during the winter season
         2. Migration patterns and reliance upon other warm water refuges
         3. How this has changed with the presence of power plants
   2. Boat and Boater Behavior and Compliance
      1. Collisions
         1. Show graph of consistency of collisions over the years and how the number has not gone down over time
            1. What the implications of this consistency in collisions means to the population of manatees
         2. Explain what the collision rate shows about boater awareness and understanding of the rules and speed zones
         3. Also show the increase in population in the Florida region, and with that, the increase in boats and what this has done to the amount of collisions with manatees
      2. Destruction of habitats
         1. Indicate the amount of seagrass destruction that is occurring and where it is.
         2. How is this effecting the manatee population and their habitat reliance in these specific regions
         3. What the laws in place are now that indicate where seagrass beds are
            1. Next to the Sarasota Siesta Key bridge sits a large seagrass bed – While working with Mote I would survey the area and see that although boaters were complying by the speed zones, they would continually race over the seagrass beds because there were no laws that told them not to.
2. Conclusions and my suggestions for modifications within the laws and strategies to protect manatees
   1. Highlight the need for more affirmative actions rather than instigating laws that may not be effective or may not be properly regulated
   2. Setting aside more MPA’s or refuges for manatees
      1. Designate natural springs as refuges in order to have sufficient habitats for manatees during winter
   3. A look at the speed zones
      1. As seen in my surveys, the set speed zones do not usually take into consideration seagrass beds
      2. Reconsideration and modification of the speed zones
   4. A new awareness program for boaters to promote compliance and awareness of not only manatees and their habitats, but also of marine life in general